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To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and improve the character of the service rendered to the public.

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ST. LAWRENCE-CHAMPLAIN-HUDSON CANAL ROUTE.

Dispatches from Washington announce that an effort will be made to have the Anglo-American Commission take up the project for a canal joining the Great Lakes and the Atlantic. This project has been favorably reported upon by a deep waterway commission, authorized by Congress and appointed by the president.

While this, the advocates of the scheme say, established the practicability of the canal, the present movement contemplates the devising of the Anglo-American Commission of a plan of joint action by which work will actually be begun. The route would be by the way of the St. Lawrence river and Lake Champlain, a cut of 29 miles being sufficient, it is said, for that link in the canal. Another cut of 24 miles would carry the canal to the Hudson river, thus connecting the shipping of New York and Chicago by way of the lakes, Welland canal, St. Lawrence river, Lake Champlain and Hudson river.

The projectors of this movement say the cut from the St. Lawrence to Lake Champlain can be made for $3,000,000, or $4,000,000, as the topography is most favorable for canal digging. They are proceeding on the idea of having the two governments do the work, each doing the construction on its own side, thus making it a government rather than a private enterprise.

This plan is one of the many which were carefully investigated and reported upon with great accuracy and detail by Major Thomas W. Symons, United States Engineer, stationed at Buffalo, in response to a resolution of Congress. This report of Major Symons, which is now one of the public documents of the country, shows that the St. Lawrence-Champlain route was one of the least advisable of the possible routes, and that any ship canal would fail to accomplish the theoretical result desired, that is, the admission of ocean-going craft to direct lake commerce.

Major Symons showed by conclusive figures that the heavy ocean craft could not compete from the inland ports to tidewater with the great cargo-carrying capacity of the open-built lake steamers and canal barges, and his investigations proved that the amount of tonnage that a ship canal could possibly carry would in no way compensate for the great expense of its construction.

The attention of Major Symons was called to the telegram from Washington and he was asked what he thought of an attempt to reopen the question of a ship canal and by the route proposed. He said:

"It is difficult for me to conceive of any one advocating the construction of the St. Lawrence-Champlain-Hudson canal, except as a mere blind.

"If a ship canal were built from Lake Erie to Lake Ontario and then down the St. Lawrence to the point of departure for Lake Champlain it would be within a few miles of tidewater at Montreal, to which port it would, of course, be extended, and that port would be the beneficiary of the canal. From the point of departure on the St. Lawrence the St. Lawrence-Champlain-Hudson ship canal would have some 300 miles of difficult, contracted canal, lake and river navigation to reach New York, a port farther away from the European markets than Montreal or the point of departure on the St. Lawrence.

"This ship canal from the St. Lawrence to New York would cost $100,000,000 to $150,000,000. Can any one familiar with the transportation problems of the country conceive of its being used to any great extent, or any extent at all, to properly commensurate with the cost? I confess that, while I have a pretty good imagination, I cannot.

"If this St. Lawrence-Chaplain-Hudson route is to be given serious consideration, it should be considered in the light of its sole possible result, that is, to deflect the commerce of the United States from our own ports to the port of Montreal, and, if this is done, the hundred millions or more, which would be the cost of the extension from the St. Lawrence to New York, might just as well be saved. That part of the canal would not be used.

"My investigations have convinced me that a great ship canal by any possible route to any of our Atlantic ports is not justified on economic grounds, and least of all is the St. Lawrence-Champlain-Hudson route justifiable.

"If the people of the United States, and especially the people of New York, go into this ship canal building proposition, they should do so with their eyes open, and not under the delusion that New York City, great and glorious as it is, can draw commerce through a difficult, dangerous and time-consuming route, 300 miles out of its natural course."

NOTICE TO MARINERS.

LIGHT-HOUSE ESTABLISHMENT,
OFFICE OF THE LIGHT-HOUSE INSPECTOR, 11TH DIST.
DETROIT, MICH., Dec. 2, 1898.

LAKE HURON.—Spectacle Reef light will be extinguished for the season and keepers removed on this date.

DUNCAN KENNEDY,
Lieut.-Commander, U. S. N.,
Inspector 11th Dist.

BIDS have been opened at Washington by Commodore Endicott, Chief of the Bureau of Yards and Docks, for the construction of a combined floating and graving steel dock at Algier, La., the limit of cost for which is $850,000. But two bids were received, Charles L. Bradbury, of New York, bidding the exact limit of the cost of the dock. The Maryland Steel Co., of Baltimore, submitted a bid of $810,000 to build the dock according to the plans of the bureau.

THE PRESIDENT APPROVES OF THE NAVAL INCREASE.

The following recommendations of the Secretary of the Navy relative to the increase of the navy have President McKinley's earnest approval:

1st. Three sea-going sheathed and coppered battleships of about 13,500 tons trial displacement, carrying the heaviest armor and most powerful ordnance for vessels of their class, and to have the highest practicable speed and great radius of action. Estimated cost, exclusive of armor and armament, $3,600,000 each.

2d. Three sheathed and coppered armored cruisers of about 12,000 tons trial displacement, carrying the heaviest armor and most powerful ordnance for vessels of their class, and to have the highest practicable speed and great radius of action. Estimated cost, exclusive of armament, $4,000,000 each.

3d. Three sheathed and coppered protected cruisers of about 6,000 tons trial displacement, to have the highest practicable speed and great radius of action, and to carry the most powerful ordnance suitable for vessels of their class. Estimated cost, exclusive of armor and armament, $2,150,000 each.

4th. Six sheathed and coppered cruisers of about 2,500 tons trial displacement; to have the highest speed compatible with good cruising qualities, great radius of action and to carry the most powerful ordnance suited to vessels of their class. Estimated cost, exclusive of armament, $1,141,000 each.

The President says he joins with the Secretary of the Navy in recommending the grades of admiral and vice admiral be temporarily re-vived, to be filled by officers who have specially distinguished themselves in the war with Spain.

ESTIMATES FOR AIDS TO NAVIGATION ON THE LAKES.

The estimates submitted to Congress for improving and extending the light-house service along the lakes are as follows:

Ohio—Establishing a new site, a keeper's dwelling, and storehouse at Cleveland, $25,000. The Light-House Board says the Cleveland main light, with keeper's dwelling annexed on the hill, is no longer needed. It is proposed to sell the real estate and erect a keeper's dwelling and storehouse on a site in the harbor to be built for that purpose. It is supposed that the property will sell for about as much as the new site and building will cost. Completing light and fog signal station at Toledo, $37,500; establishing light and fog station at Fisherman's Shoal, Wis., $50,000; same at Point Aux Barques, Wis., $32,000; fog signal at Escanaba, Mich., $5,000; same at Michigan City, Ind., $5,500; keeper's dwelling and light station at Portage Lake, Mich., $3,500; at Kewaunee, Wis., light and fog signal station, $7,500; establishing light vessel with fog signal at Peshtigo Reef, Wis., $15,000; constructing and equipping steam tender for ninth light-house district to take the place of an old iron screw steamer, $85,000; tender for engineer of ninth district for construction and repair work, $85,000; keeper's dwelling and range at Grassy Island, Mich., $5,000; same at Grosse Isle, South Channel, $5,000; same at North Channel, $35,000; light and fog signal station, Chapman Shoal, N. Y., $5,000; enlarging depot at Buffalo, $50,000; constructing and equipping tender for tenth district, $85,000; establishing light and fog station at Middle Island, Mich., $25,000; same at Crispe Point Beach, $18,000; same at Rock of Ages, Mich., $50,000; moving light from Eagle river to Sand Hills, Mich., $20,000; establishing light vessel off Martin's Reef, Lake Huron, $15,000.

Continuing surveys for the deep waterway between the lakes and the Atlantic Ocean, $60,000; surveys of the lakes, $147,000; marine hospital at Cleveland, $136,000; $10,000 for officers' quarters and $3,500 for isolation ward and mortuary.

NEWS AROUND THE LAKES.

DETROIT.

Special Correspondence to The Marine Record.

The steamer Stevens, bound down, returned to Amherstburg on Tuesday with shoe bent and rudder unshipped. A diver was immediately engaged to work on the damage.

Fire was discovered on the small steamer Nipigon, owned by the Whitney Transportation Co., on Sunday night, and after it was put out the damage to her hull and machinery was found to be quite considerable.

The Chamber of Commerce has sent out this week a telling pamphlet on the industrial advantages of Detroit and its favorable location for manufacturing plants. This is the sort of literature that counts in the eventual upbuilding of a city.

Owing to a low stage of water at the Limekiln Crossing a fleet of over fifty vessels was held in the river until Tuesday, some of them having had to wait for a raise since last Sunday. This phase of navigation is getting something like the Ohio river custom, only instead of waiting for a shower of rain it is a case of waiting for a change of wind.

Capt. Powell and part of the crew of the steamer Fayette Brown, ashore at Point Pelee Passage, reached Amherstburg, on Wednesday. The crew were compelled to abandon the vessel on account of the storm. Capt. Powell reports that she is in bad shape and is likely to go to pieces unless the weather moderates. Part of the stern and deck works are gone. The stranded steamer is insured for $130,000.

The steamer Fayette Brown grounded on Tuesday in Pelee Passage. The wrecking tug Wales, was dispatched to her assistance. The Brown is about 10 years old, built at Wyandotte by the Detroit Dry Dock Company. Secretary Waldo, of the Northwestern Transportation Company, her owners, says that at the time of the arrival of the steamer in the Pelee Passage the water was quite high, but that a shift of wind began to lower it. The Brown has 3,000 tons of hard coal from Buffalo to Chicago.

Mr. Frank E. Kirby, rendered the government special service in selecting vessels to be used in the transport service during the late Spanish imbroglio. It has been mentioned this week that Mr. Kirby,s account totals up to $50,000 and some novices imagine the amount is too large. Those who can only partly comprehend the value of Mr. Kirby's professional services say that his bill is only about half what it should be and condemn his modesty for valuing his unique and expert skill away below par, and so say all of us.

Charles A. Chamberlain received a telegram from Gloucester, Mass., on Monday, stating that his schooner Porter had been abandoned off that port, with all her sails and rigging carried away, and in a sinking condition. The message came from her master, Capt. Herbert Parsons, who reported all hands well. The Porter was 24 years old and was a 710 schooner valued at about $18,000 and fully insured by the Atlantic Transportation Company, to which she was under a three years' charter to carry coal from Newport News to eastern points.

The schooner E. J. McVea was cut through by ice on Lake Erie and went to the bottom. She is a total loss. After the McVea was cut into by the green ice, her crew managed to keep her afloat until the tow was abreast Grassy Island, when she foundered. The crew escaped in the yawlboat and were picked up by the Sicken. They saved some of their effects. The McVea measured 277 net tons and was built in Allegan in 1873. She was owned by M. Sicken, of Marine City. The McVea ought to have been taken to the coast to keep company with the rest of the fleet.

The blow, down on the New England coast wiped out some of the old wooden lake built schooners and tow barges and it is a foregone conclusion that others will shortly follow. Mr. Besse, manager of the Atlantic Transportation Co., who came to the lakes and chartered these craft may be a very good business man, and as slick as a down east Yankee is usually credited with being, but his respected father who I learn has had a whole life time of coast sailing experience is now in a position to poke fun at the influential manager and his notions of transplanting tonnage not indigenous to the briny and its charming weather variations; the old man would have known better.

The Circuit Court, at Bay City, has issued an order to William Keith, receiver, to sell all of the personal property of the Wheeler Shipyard Co. remaining in his hands, to Capt. John Mitchell, of Cleveland, for $5,000. This is believed to be the last thing necessary to be done to permit the re-opening of the Wheeler yard under the management of F. W. Wheeler. Mr. Wheeler has secured a majority of the bondholders to permit the operation of the yard and the plant will be placed in readiness at once to begin work as soon as possible. It is also reported that contracts have been secured to build sister ships to the Samuel F. B. Morse and consorts for Gratwick, Smith & Fryer.

Vessel owners are making a strong protest against the discontinuance of lights on Lakes Superior and Huron before the close of navigation. Already the most important lights on both these lakes have been shut down, and boats will be run for a week yet. The Light-House Board, or the district officers must surely be acting under the recent decision of Judge Swan, District Court of Detroit, when he closed navigation at noon of November 30. The Weather Bureau of the Department of Agriculture don't even know it all, or not enough to take the wheel out of the hands of the Supreme Ruler. The wind bloweth where it whispereth and we are all at liberty to go by guess and by—appearances, but then again there is no telling to a dead certainty just what the weather is going to do a week ahead just about this time of the year.

CHICAGO.

Special Correspondence to The Marine Record.

The James Fisk Jr., which was chartered by the L. M. & L. S. Transportation Co. last spring has been returned to the Union Transportation Co., her owners at Buffalo.

The Minnesota steamer Mesaba got out of the channel in entering South Chicago on Tuesday and went aground just outside the harbor. After 400 tons of ore were lightered she floated and proceeded to her dock.

At Miller Bros.' shipyard the L. M. & L. S. Transportation Co.'s steamer Peerless is in dock receiving some new keel forward and aft, nine new bottom planks and calking bottom and top sides and fastening wheel. The repairs on the barge Iron Cliff will be completed this month.

The Milwaukee Dry Dock Company, has completed the repairs to the large steel steamer S. S. Curry, which was damaged by grounding on Ducks Island. About a dozen frames, floors and plates have been renewed. The repairs were made under the supervision of Capt. F. D. Herriman, who represented the underwriters.

The tug J. C. Evans, of the Dunham line, has been chartered by the Flint & Pere Marquette Railroad for the winter season. The Evans, which is a rebuilt boat, will go to Ludington December 15 and be used in breaking ice in the slips used by the car ferry steamers operated by the railroad company during the winter. The contract runs until April 15.

The new steel tug Cornelius Bos, built for Verduin Bros., fishermen at Grand Haven, was launched at the Johnston Bros.' plant at Ferrysburg on Wednesday. This is the first steel boat of any type to be built at Ferrysburg and now it is said that other contracts are likely to be placed, as the Johnston Bros. have a first rate plant, though of course it is rather small as yet.

Capt. Edward Christiansen, mate of the steamer J. W Westcott, was lost overboard from that vessel on Lake Michigan last Wednesday. Deceased was a son of Joachim Christiansen, an old resident of Milwaukee, and well known dealer in coal and wood on the south side. He was formerly captain of the schooner Ida. His age is given as thirty-eight years. He leaves a widow and one child, who live in Racine.

More complaints have been heard from Milwaukee about the Chicago & Northwestern railway bridge across the river at that port being kept closed for half an hour at a time when vessels want to pass through. This week the revenue cutter Morrill, Capt. Davis, just arrived from the coast, was delayed for fully half an hour at the bridge, and the experienced commander is just choleric enough in his temperament to raise Cain about such an evident lack of discipline and good order.

The rumors about the Federal Steel Co. taking over the Chicago Ship Building Co.'s plant and building twelve vessels during the coming year is not given too much credence in vessel circles; moreover, Manager Babcock denies the report. There is, of course, a business and financial connection, inasmuch as stockholders in the shipbuilding company are also interested in the Federal Steel Co., but it is generally thought that in any event the shipyard would be kept on a separate and independent basis. Steel making is not shipbuilding, notwithstanding steel is required for constructive purposes.

Capt. J. S. Dunham and Lloyd Smith, of the committee appointed by the Chicago Board of Trade to petition the Anglo-American Commission for the abolishment of the tolls on vessels passing through the Welland canal, left here for Washington on Tuesday morning to lay their case before the American portion of the commission. There they will meet with Harvey D. Goulder, of Cleveland counsel for the Lake Carriers' Association, and probably delegates from Oswego and Ogdensburg. Capt. J. G. Keith, the third member of the Chicago committee, was unable to attend. The delegates will meet on Thursday and arrange a meeting before the commissioners. The joint commission will not hear arguments from outside sources during its sessions, but the Americans have signified a desire to hear the side of the vesselmen who wish to have the Welland tolls done away with. Harvey D. Goulder, Esq., will make the argument for them, and as usual with Mr. Goulder the brief is certain to be a most convincing one.

Chicago is to have a modern yacht building plant. A. G. Cuthbert, naval architect and yacht builder, has just secured the lease of the property lying on the Calumet river just east of Ninety-second street bridge. He will at once erect a building and begin work on several new boats. One of the first craft will be the challenger for the Canada cup, which will be constructed for Messrs. Peare, Lytton & Smith. This is one of the three challengers building for the Chicago Yacht Club's trial races next spring. The establishment of a yacht yard at South Chicago will have a tendency to increase the number of boats owned here. Hitherto there has been no place to have small boats constructed by the latest plans as to framing and design, and it is an item of considerable expense to build a boat in a town a long distance away. Mr. Cuthbert is known as the designer of several crack yachts in the fleets of the Canadian clubs. Last summer he built the small fin keels for the Chicago Yacht Club, which were known as the "pups." All sorts of craft, sail and steam, will be turned out from his yard.

CAPT. WM. LAMOTHE, who has just died at West Alton, Ill., aged 81, was the original Jim Bludso in Hay's stirring poem. He was a Mississippi pilot for many years, beginning in 1832. It was the burning of his boat, the Luella, that furnished material for the lines referred to.

BUFFALO.

Special Correspondence to The Marine Record.

The Western Transit Company's boats will all be in winter quarters by the end of the week.

The Lockwood, Stafford, Williams and Francomb, now at this port, have received orders to proceed to Ashtabula and winter there.

The steamer Charles Stewart Parnell was brought down this trip by Capt. Parsons, Capt. Griffin being laid up. His illness, however, is not thought to be serious.

Capt. John Mitchell, of Cleveland, and M. J. Cummings of Oswego, owner of the Charles Stewart Parnell and Monteagle, visited this port during the week trying to expedite the discharging of their steamers.

If a vessel could only have the privilege of discharging at any elevator that was found ready to receive her grain cargo there would be no detention experienced at this port. This is a question that might come before the Lake Carriers' Association at its next annual meeting, and, as so much has been accomplished in the past, a grand united effort among the principal owners, outside of the line boats, could perhaps do away with, or in many instances alter the clause in bills of lading consigning the cargo to a specific elevator when it was found on arrival that the elevator was already blocked.

There is no getting around the fact that the detention of grain laden vessels here all week has been the worst local feature of the season of navigation. Consigned to an elevator only to find it full, unable to take delivery of the cargo and waiting for railroad cars to ship out. There might be a big central clearing house, sort of a grain elevator where vessels could discharge when the one they were consigned to couldn't receive any more cargoes. The way to bring this about is to have afew good heavy cases of demurrage, and under the circumstances it ought to be easy enough to get judgment for such rank detention and heavy losses to vessel owners.

Engineer Ritchie and his assistants will finish the river sounding work for the Deep Waterways Commission this week. They are now working at Tonawanda. The yacht Portia, chartered for the use of the engineers on the river, will be returned to her owner, Capt. Edward Maytham. It was expected that the work of taking the levels and surroundings of Niagara river would be completed this season, but there will remain a section extending from Nettle's Point to the lower end of Grand Island which has not been gone over. There is a possibility that the work may be continued next season. The work, however, is at the discretion of the Chief of Engineers, War Department.

It now looks as if the Western Transit Co.'s steamer Harlem was going to stay all winter on the rocks at Isle Royale, north shore of Lake Superior. She is reported in very bad shape, only 600 tons of her cargo has been saved. The Harlem was built at Wyandotte by the Detroit Dry Dock Co. in 1888, had a net tonnage of 1858, and was valued for insurance purposes this year at $185,000. There is still some hopes of floating the wooden steamer Tampa, stranded on the north shore, but the chances are against her. The steel steamer Arthur Orr is at Superior but all out of shape and a constructive total loss. The Tampa and Orr piled themselves up at the same time and within a few miles of each other.

Major Thomas W. Symons, Corps of Engineers, U. S. A., has submitted to the chief of engineers his annual report on the river and harbor work at Buffalo, Erie, Dunkirk, Tonawanda and Niagara Falls. In his report of the harbor work at this port Major Symons treats of the obstruction of the mouth of Buffalo river by vessels coaling at the Delaware, Lackawana & Western coal docks on the government pier, which, Major Symons has contended, is an unwarranted crowding of the most used strip of water on the lakes, and that the occupancy of the pier by the railroad for its coal docks is an illegal one. Major Symons advises the abandonment of the sea wall as a harbor improvement. Its use as a highway has already been authorized.

The wonder is that when the agent or manager for the Atlantic Transportation Co., of New York, was around the lakes looking for tonnage he did not secure some of the wooden line boats out of this port. These vessels have all been well kept up, are sound and fairly good carriers for their size, also able to tow and make a better showing than some of the craft that were chartered. Moreover, they would have made good tow barges with the machinery taken out of them. The Lehigh Valley line, Anchor line, Western Transit Co. and perhaps one or two others could and perhaps would dispose of some of their smaller tonnage at a very low figure and the argument is that the boats are sound that is, if spending money on them and giving always all they wanted could keep them so.

In the report of lake freights given in the RECORD last week I noticed the remark that one Cleveland vessel owner usually gathered in a good rake-off with his last couple of cargoes from Lake Superior, and that he had done it regularly, too. There can be no doubt but that the allusion was to the Wilson fleet, as the Yuma of that line left this port on Monday night light for Lake Superior. The Yuma will load 140,000 bushels of wheat at 4 cents and her freight will be about $5,600. She will be one of the last boats to go to Lake Superior from a Lake Erie port. Capt. Daniel Buie is master of the Yuma. Capt. Edward Morton, commodore of the Wilson fleet, will also make the trip in her. It would be no surprise if Capt. Thos. Wilson, manager of the line, had another boat laying around handy somewhere to put in at the same or an even a better figure.

CLEVELAND.

Special Correspondence to The Marine Record.

Mr. C. A. Macdonald, general marine insurance agent, Chicago, visited at this port during the week and circled among vessel owners.

The total shipments of iron ore from all lake ports for the season will come close to fourteen million tons. A small percentage of iron ore is shipped all rail.

Mr. Luther Allen, secretary and treasurer of the Globe Iron Works Co., has fully recovered from his recent protracted illness and is to the fore again as in the good old times.

The Globe Iron Works Co. are now receiving material for their new contracts and a large number of men are being employed at their shipyard, engine and boiler shop departments.

The Spokane, of the Wilson Transit line, now at Duluth discharging coal, is chartered for wheat to Buffalo at a 4-cent rate. The steel steamer Yuma has a similar charter which will gross her nearly $6,000.

Mr. Henry Lay, fish dealer of Sandusky, spent Monday at this port visiting friends and business associates. Mr. Lay has not joined the Booth syndicate, although interested in other fishing companies besides the one at Sandusky.

An offer to purchase the controling interest of the steel steamer now building at the Toledo yards of the Craig Ship Building Co., has been refused. She must either be bought outright or the builders will handle her themselves in the Welland canal and probably Montreal trade where she will be a money earner.

The steel steamer Andaste is docked in the Ship Owners' dry dock for survey and repairs to bottom damage. The surveyors on the damage are Mr. Robert Logan for the owners, and Mr. Walter Miller representing the underwriters. The steel steamer Cadillac is in the lower dry dock for repairs to her stern bearings.

The schooner Geo. B. Owen, with a cargo of 1,500 tons coal, is still on the beach east of Ashtabula, where she went ashore Tuesday evening. Several tugs have been to her but could not get near enough to make fast a tow line on account of the heavy seas. As near as can be ascertained she is resting easy on a sand bottom, and is in no immediate danger of going to pieces.

A report comes from Duluth that Mr. James C. Wallace, vice-president and manager of the Cleveland Ship Building Co., has been spending a few days with Capt. A. B. Wolvin regarding the construction of another large steel steamer. The Cleveland Ship Building Co. have built the latest and largest steamers for this line and they have given excellent satisfaction in every particular.

A surfman named Johnson has filed charges against Capt. Motley, keeper of the life-saving station. The naval inspector of the district will hold an inquiry regarding the complaint immediately on the station being closed for the season. Capt. Motley believes in a modicum of discipline and the surfman is accused of despising the rules and regulations of the service as well as several acts of insubordination.

Messrs. Corrigan, Kinney & Co. have leased the Breitung interest in the Monitor iron ore mine near Crystal Falls, Mich. On the re-opening the whistle for the miners to go to work blew for the first time in five years. The district has an aggregate output of 700,000 tons annually. Mr. James Corrigan, an ex-president of the Lake Carriers' Association, is one of the keenest and most progressive business men in the western country.

The firm of Messrs. Bassett, Presley & Train, whose card appears in the advertising columns of the RECORD this week, have shipped a large order of iron and steel to Milwaukee for ship building and repair work at the yards of the Milwaukee Dry Dock Company. The trade in manufactured steel for marine work is reported as being fairly good and orders from the medium sized lake shipyards are being received with due regularity.

Notwithstanding the severe winter weather this week, ore shippers were trying to charter a few more Escanaba vessels at 70 cents on Tuesday, and coal shippers for several loads to Lake Michigan, at 45 cents for Gladstone and Escanaba and 40 cents to Milwaukee. No more boats will load coal for Duluth this year. The steamers that were figuring on cargoes were chartered for Lake Michigan. Cargoes were offered freely for Milwaukee, Chicago and Gladstone at above rates.

Members of the River and Harbor Committee are now confidentially asserting that Congressman T. E. Burton, of this district, will become the chairman of the committee, succeeding Mr. Hooker, of Fredonia, N. Y., who has resigned his seat. One of the members stated that the choice of chairman now falls on the committee and that, therefore, Mr. Burton's selection is assured. It seems to be a foregone conclusion that the Cleveland member will get the honor. Later, his election was unanimous.

That was a smart spurt that the City of Erie, of the Cleveland & Buffalo line, made last week. Here is the way that Mr. Newman, general manager of the line, puts it: The side wheel passenger steamer City of Erie ran from the Cleveland breakwater to the Lorain piers last Friday in one hour and sixteen minutes. The distance is thirty miles, as shown by the government distance table. This is at the rate of $23\frac{68}{100}$ miles per hour, the fastest time ever recorded on the lakes to date. All the steamers of the C. & B. line are laid up in Lorain for the winter.

Again is there some talk of forming a mutual marine insurance company among vessel owners, the old checkmate of class is however likely to squelch the formation of such a board, the owners of the largest and best will by no means enter a pool with tonnage that they consider inferior to their own, nor can the Lake Carriers' Association, as a body, appoint a mutual marine indemnity board or take any hand in the business of insurance. It is no small piece of work to class, grade and rate all classes of tonnage. The association might have a couple of good wrecking tugs though, stationed at handy points to help "lame ducks" through the season.

A meeting of vessel owners to discuss insurance for next year was to have been held on Wednesday, but the owners did not get together. A Chicago insurance agent is here trying to get the owners of vessel property interested in a new plan. His project is to get the vessel men to lump their insurance business and carry about 10 or 15 per cent. of the risks themselves. By doing this the general agent claims that he can go to some of the old companies that were driven out of the business by the foreign underwriters and get a fair rate and a more liberal form of policy than may be expected from the foreign syndicates now doing business on the lakes. Vessel owners as a rule think well of the plan, and some action in the matter will probably be taken during the next week.

The steamer City of Detroit made the last trip of the season to Detroit on Wednesday. The steamers of the D. & C. line have had a very successful year and although they are the first passenger boats out in the spring and the last in the fall they have not missed a trip between Cleveland and Detroit this season. General agent D. C. McIntyre, has earned golden opinions this season among shippers and the traveling public as a level headed, business like and thoroughly competent manager at this end of the route. Mr. McIntyre is painstaking in his duties and invariably courteous to all with whom he is brought into business contact. Much credit is due the masters, pilots and engineers of the D. & C. line for the success which has attended the regular sailings throughout the past season.

It now looks as if the municipality was not stopped a day too early in its practice of dumping solids in the outer harbor. A gay old shoal has already been formed off the foot of Erie street and a large steel steamer run her nose into it Wednesday morning, the life boat, tugs and a general excitement followed. This port is not quite ready yet to make vessels go over bridges and under archways in an effort to get alongside of a dock. If it happens to move back to Berea, a few banks and shoals dotted promiscuously around the outer harbor and across the entrance to the Cuyahoga or the lake front won't be of so much consequence, besides, a few nice banks just awash looks picturesque, but the Director of Public Works ought to permit a few more vessels to ripple the surface of the Cuyahoga before closing the port.

Being in the same place with a company of lake engineers this week who were talking about the numerous wrecks during the past few days, their conversation turned upon life belts, and one, who by the way is a well-known and one of the best engineers in the lake service, gave it as his opinion that quite a large number of life belts furnished vessels recently contained pressed reed pith instead of cork. On the test he said they were all right and passed, but after being a few hours in the water and getting saturated they would be found first-class anchors or a drowning fixing. Now, if there is any truth in this engineer's views, it is a fraud on the owners, who, as a rule, are always willing to pay a fair price for a good article, and they invariably want the best, especially when it comes to life-saving appliances. There may be some mean soulless shipchandlers that by cutting under prices have been furnishing inferior life buoys and belts, if so, the local steamboat inspectors should get after such hounds and give them the limit of the law, besides stopping their nefarious practices. In objecting to the statement that such life belts existed I was challenged to go aboard of some boats and examine for myself, which, of course, was a very conclusive way of stopping the argument on my part as I have neither the leisure nor the authority to constitute myself a committee of one to examine ring buoys or life-saving jackets, though it was said that the ring buoys were generally all right. I may say, though, that if a direct tip is given me where I could see a sample of reed pith—"cork"—life jackets, I would go shark-like as a Nemesis after the man killers. Everyone should be loath to believe that any such life-taking equipment can be found on board of lake vessels, at the same time I quit the company just vindictive enough to think of quietly severing four stitches in life belts here and there next season.

FLOTSAM JETSAM AND LAGAN.

The steamer W. H. Wolf is to be fitted with pole spars.

The last steamer expected from the upper lakes has arrived at Oswego with barley from Chicago.

The collision damage of the whaleback steamer James B. Colgate has been fully repaired at West Superior.

Albert Christie, a carpenter working on the steamer Wisconsin, at Grand Haven, fell from the upper deck on Tuesday and sustained a slight fracture of the skull.

Commodore Hugh Hone, of Toledo, is having a fine ice boat built; Ed. Wingereid and Emil Heibner are building a yacht to be enrolled in the Up-River Yacht Club; Capt. Ed. Grasser is also starting in to built a fast little sailing yacht.

The wrecker Protector released the steamer Sibley from the Fox on Tuesday night, but the seas broke the patch off the side and she filled so rapidly that the wreckers were compelled to beach her again on a sandy bottom four miles south of the place where she stranded.

The official time of the torpedo destroyer Farragut, built on the Pacific coast, has been computed and her record is 30.6 knots an hour, with 426 revolutions of the propeller. This will be the return made to the Navy Department by the trial board. The Farragut is the fastest vessel flying the American flag.

The wrecking tug Protector arrived at Charlevoix on Wednesday, from North Fox Island reports that the steamer H. W. Sibley had entirely gone to pieces. The worst northwest gale of the season had prevailed since the Sibley was beached after being released to prevent her going down in deep water.

The whaleback steamer A. D. Thomson stranded on Sand Island, one of the Apostle group, last week, while on a passage from Duluth to Ashland in ballast. She succeeded in releasing herself without damage. The mishap is attributed to the discontinuance of the lights on the Apostle Islands for the season.

The Light-House Board is going to try an experiment at Marquette in illuminating the light-house with electricity. A submarine cable will be laid from the Marquette city plant to the light-house and current can be turned on from the shore so that no matter how fierce the storm, there need never be fear but that the light will be burning brightly.

The findings of the naval court of inquiry concerning the abandonment of the Infanta Maria Teresa during the storm of October 29 have been made public. The court finds the abandonment was not due to any fault or negligence on the part of any officer of the Navy and that the court does not think any further proceedings should be instituted.

There was a regular session of the American Association of Marine Underwriters held in New York on Wednesday. The question of a possible increase in marine insurance rates due to the heavy losses in the recent severe storms, was discussed at length, but the subjeet was relegated to the individual companies for any change they see fit to make in their policies and rates, as it was felt that no concerted action was required.

The month of November gained the record for wheat receipts over the Northern Pacific road at the head of the lakes. The number of cars received was 7,325 as compared with 4,975 cars in November in 1897. The increase in the volume of grain is larger than appears in the increased number of cars. In 1897 all of the cars were of 50,000 pounds capacity, while during November this year there were 1,600 cars in the service of 70,000 pounds capacity.

The steel steamer Arthur Orr has been towed safely to Superior, Wis., after being stranded at Baptism Bay on the north shore of Lake Superior. It was at first thought that the vessel was an actual total loss, but after getting the cargo out of her and putting an army of riveters and iron workers aboard, the hull was finally released from the rocks, but it took smart and skillful wrecking talent to do it. She is now pronounced a constructive total loss as she lays at the dock.

Officials of the Toledo & Ann Arbor railway give out that they will have built, for service a year hence, a powerful steel tug to maintain an open channel between Menominee and the Sturgeon bay canal throughout the winter months. The bow of the hull will be spoon shaped. The intention of the railway people is to continue the new Ann Arbor No. 3 on the route between Frankfort and Menominee until the ice becomes too thick to break. This they figure will not occur before February.

The United States steamer Pathfinder was launched from the Nixon shipyard at Elizabeth, N. J., on Wednesday. Miss Ruth W. Crandon, niece of Secretary Gage, christened the vessel. The Pathfinder will be the largest vessel ever employed in the coast survey service and was designed especially for surveys and explorations along the Aleutian Islands. She is 196 feet over all, 165 feet on the water line, 33½ feet beam, with a depth of nearly 20 feet and a displacement of 875 tons on 11 feet mean draught.

Dreams of wealth are the the natural consequence of taking prizes, and a Poughkeepsie dispatch says that a claim has been filed with the sixth auditor of the treasury by James H. Kelley, a first class fireman on the auxiliary cruiser St. Paul, for $7,000 prize money, which he contends is due him from the government. He says that the sum of $700,000 prize money is due the crew of the St. Paul for the capture of the British ship Restormel, with coal for Cervera's squadron, and the disabling of the Spanish torpedo boat Terror, at San Juan, Porto Rico. Kelley ought to be employed as figurer-in-chief by all claimants, suggests the Army and Navy Journal.

Some masters have a charming contempt for the limbs of the law. A steamer had a libel clapped on her main mast in Queenstown a few days ago and the marshal left a bailiff in charge, the master got his anchor and proceeded on to New York chased by a naval pinnace. When well clear of the land he invited the bailiff either to take a trip across the pond or row himself ashore, and the latter alternative was accepted. The writ had been made out against the steamer Briardene, of Halifax, instead of Newcastle, so the gallant skipper crossed the Atlantic safely, has possession of his vessel and is to the windward of the law. A Cleveland steamer was also pursued out of Duluth this week and they thought the master would slow down and stop while they plastered a writ on his main stick also, but he gave them the genial goodbye like his Queenstown contemporary.

SUMMARY OF THE REPORT OF THE HON. E. T. CHAMBERLAIN, COMMISSIONER OF NAVIGATION.

Washington.—Special to The Marine Record:

The annual report of Commissioner of Navigation Chamberlain is devoted mainly to statistics and facts in support of the project for the creation of the American merchant marine, recommended by Secretary Gage. Excluding the Great Lakes, practically shut off by Niagara Falls from foreign competition, the tonnage of vessels entered and cleared at seaports of the United States in foreign trade for 1897 comprised 7,248,625 tons American and 32,632,419 tons foreign shipping. If a line be drawn everywhere 1,500 nautical miles distant from our seacoast, trade between foreign ports inside that zone and the United States comprised 5,178,969 tons American, and 5,813,393 tons foreign shipping. In oversea navigation to foreign ports more than 1,500 miles distant, American shipping amounted to only 2,068,658 tons compared with 27,419,026 tons foreign.

Only three practical courses, at the present time, are open to the United States:

First. We may retain our laws unchanged, ignore national navigation, and continue to rely on vessels under foreign flags for the transportation of our exports and imports.

Second. We may permit foreign-built vessels to register under the American flag, ship crews abroad and increase national navigation.

Third. We may extend direct government aid to vessels built in the United States, and thus increase both national navigation and national shipbuilding.

The last named of these three courses is suggested to a very great extent by our new relations to the rest of the world, which expects the United States to become a maritime power. For the first time we now hold, and shall doubtless permanently hold, inhabitated territory beyond the limit of the North American continent. If all that such possession involved were the physical force to keep these domains against all comers, the vote of some extra tens of millions every year to the Army and Navy would be sufficient. The flag of the United States should be more than the token of conquest by superior strength. Our maritime position must correspond to our pretensions, and to attain this result American shipyards and American ships must be increased, and reasonable contributions from the treasury toward this result should not be begrudged.

Nations and individuals that dissent from the general theory of government aid to private enterprise concede on political grounds an exception in favor of shipbuilding and navigation. Largely through indifference, we have lost the share in transatlantic navigation which was once ours. The growing trade of the Pacific is rapidly slipping away from us. Excluding Hawaii, entries and clearances from Asia and Oceanica at ports of the United States in 1890 amounted to 235,260 tons American shipping, and in 1897 to only 221,438 tons, while foreign shipping increased from 421,242 tons to 934,720 tons. Foreign nations are now skilfully following the policy of government aid to develop their navigation in the Pacific. Toward steamship lines to the east coast of Asia alone, Great Britain, last year, contributed $1,250,000; France, $1,217,000; Germany, $480,000; Spain (1896), $418,000; Russia, $405,000; Austria, $306,000, and Italy, $377,000. The United States paid only $40,000 to American lines to Asia at regular mail rates. We have deluded ourselves into the belief that the Pacific trade will become ours without taking ordinary precautions to meet competition. Liberal extracts are published from the report on which the Reichstag last year increased to 5,520,000 marks subsidies to German vessels in the Pacific, showing that Germany is already endeavoring to forestall the United States in securing commercial control of the Pacific.

The act of 1891 was designed to secure the largest and quickest steamships in the world for the American service on the Atlantic Marine construction, however, has advanced beyond size and speed contemplated when that act was passed. It has proved inadequate for the Pacific. Its maximum rates for that trade are $2.30 per nautical mile outward for a 10-knot steamship. The British government pays $2.82 to the Peninsular and Oriental and $2.40 to the Canadian Pacific lines; the German government $2.54 to 14-knot vessels of the North German Lloyd; and the French government $3.98 to the Messageries Maritimes for the equivalent of an inferior service to Asia.

Spain imposed annual charges of $580,000 on Cuba, $135,000 on Puerto Rico and $170,000 on the Philippines for steam communication, and herself contributed $1,000,000 more for that purpose. The Spanish total is about double the entire support the United States gave to American steamships in 1897. The obligations we have assumed by taking Puerto Rico and the Philippines, annexing Hawaii, and governing Cuba, thus requires us to make larger appropriations for the merchant marine, or to confess our weakness by abandoning navigation to Great Britain, France and Japan.

We must also take steps for the qualified admission of foreign ships to American registry in order to enter immediately into active competition for Asiatic trade. The act of 1891 calls for 5,000-ton steamships of 16 knots. We have only ten sea-going steamships of over 4,000 tons. Four of these are American trans-Atlantic liners and two New York and Cuba mail liners, already under postal contract. The Arizona, 5,300 tons, 16 knots, is the only vessel complying with the requirements of the act of 1891, and she was admitted by Congress, last June, to American registry and bought by the War Department. The China, admitted by Congress at the same time, is 4,940 tons, 17 knots. The two remaining vessels are the City of Peking, 5,060 tons, 14 knots, built in 1874, and the El Rio, owned by the Navy under the name of Dixie.

It will require at least 18 months to build vessels of over 5,000 tons and 16, knots needed to meet new conditions in the Pacific. Meanwhile a combination of four large German lines, aided by the Reichstag, is hastening to completion steamships to carry out German Imperial policy in Asia.

A relaxation of the registry law was necessary to establish our trans-Atlantic line, and a similar relaxation is now necessary to meet conditions on the Pacific. It is proposed that foreign-built vessels be admitted to American registry on condition that equivalent tonnage be built in the United States as was done in the case of the Paris, New York, St. Louis and St. Paul. The admission of 40,000 tons of foreign shipping by Congress last spring and the purchase of nearly 100,000 tons of foreign shipping by the War and Navy Departments furnishes another precedent. By a similar policy, Germany has built up within 14 years its great shipyards. From 1885 to 1891 the North German Lloyd spent $7,500,000 in German and $9,000,000 in British yards, while from 1891 to 1897 it spent $16,000,000 in German yards and only $1,500,000 in British yards.

The report considers differences in cost of construction and operation under the American and British flag, and concludes that on the average for cargo steamships now generally in use by foreign nations, this difference amounts to about one cent per ton for each 100 nautical miles. The French navigation bounty rate for such vessels is two and one-tenth cents, the Italian one and one-half cents and the Japanese one and one quarter cents. On the basis considered, an average annual expenditure of about $8,000,000 for 12 or 15 years, aided by industrial development, will give the United States a becoming maritime rank. This sum is substantially the expenditure for sugar bounties under the tariff of 1896. By investing the necessary capital, the United States can become a shipbuilding power superior to Germany and a close competitor with Great Britain. This autumn we exported plates for the largest steamship now on the ways in Great Britain. Five years ago we imported the plates from Great Britain for our first large steel square rigged ship.

The project to develop shipbuilding by discriminating duties is in conflict with our treaties and its advocacy at this time involves an indefinite postponement of action and in the end retaliation. The proposition to pay bounties on exports is not feasible as our treaties bind us to pay the same bounties on exports in foreign vessels as in domestic vessels.

Trade between the United States and Puerto Rico now by executive order restricted to American vessels should be so confined by statute. This step is desirable, not chiefly on account of the direct trade, which is not large, but to furnish a base of operations for American navigation in the Caribbean and Gulf, incidental to our newly-won political prominence in that sphere. In December Great Britain proposes to subsidize four British lines in the West Indies, in addition to the subsidy of $400,000 already paid to the Royal Mail line.

The restriction of trade between the United States and Hawaii to American vessels is even more important for analogous reasons. Of that trade, 80 per cent. is already carried on by American vessels, and every 10 per cent. of the remainder by Hawaiian vessels, which will doubtless be admitted to American registry by Congress. American vessels now leaving in ballast will suffice to supply the transportation requirements of the islands, if foreign vessels are withdrawn. Almost the entire value of the annexation of Hawaii to the development of American navigation in the Pacific is involved in treating the islands as an extension of our boundaries, bringing us from 1,500 to 2,000 miles nearer the markets of Asia and Australia. The opposition of British and German interests to the proposition is anticipated in the line of their consistent policy by subsidies to develop their shipping on the Pacific. The restrictions proposed, however, is in strict accord with our national policy and with our treaties, and does not interfere with existing trade relations.

A revision of tonnage tax laws is proposed. We now charge 30 cents per ton annually on vessels in over-sea navigation, which is much less than the charges of Great Britain, Germany France, Italy and Norway. A steamship on twelve trips pays 30 cents annually at New York, $1.05 at Liverpool, $1.26 at London, and 96 cents at Hamburg or Bremen.

Our expenditures for maritime safe-guards and improvements are vastly greater than those of any other nation, amounting to $18,000,000 annually for the past decade, toward which, shipping has contributed barely 3 per cent. Our principal and most costly improvements are directly for the benefit of foreign shipping, which enjoys over four-fifths of our foreign carrying. A table of the 56 largest steamships is printed, of which only four are American. Of these, 33 make New York a terminal point, while only 17 enter at Liverpool, and less than 10 make any other foreign port a terminal. This table foreshadows large federal expenditures for harbor improvements, which in Great Britain are met by charges on shipping. We have recently expended $6,000,000 on Galveston harbor and channels. Since 1890 American tonnage in foreign trade at that port has decreased from 17,000 tons to 3,000 tons, while foreign shipping has increased from 260,000 tons to 1,018,000 tons. The United States, of course, derives great benefit from such improvements, but as they are made gratuitously in this country, the proposition is considered reasonable that foreign shipping should contribute at least a fair share towards lighting our harbors and sea coasts, which costs about $2,000,000 annually.

The report also considers legislation from the improvement of American seamen, pilotage charges, seaworthiness of vessels, allotment of wages and other matters. The annual statistics of the report were published in October.

Note—The full text of the annual report of the Commissioner of Navigation will probably be ready for distribution about December 15.

SUN'S AMPLITUDES.

The following approximate amplitudes of the Sun's rising will be given each week in this column during the season of navigation. A second bearing may be taken by compass at sunset by reversing the east bearings given for the nearest latitude, as the change in declination for a few hours makes but a slight difference in the true bearing of the Sun's setting:

LAKE ERIE AND S. END LAKE MICHIGAN, LAT. 42° N.

Sunrise.	Bearing.	Bearing.
December 9	E. 32° S.	S. E. by E. ⅛ E.
December 13	E. 32° S.	S. E. by E. ⅛ E.
December 16	E. 32° S.	S. E. by E. ⅛ E.

LAKE ONTARIO, S. END HURON AND CENTRAL PORTION LAKE MICHIGAN, LAT. 44° N.

Sunrise.	Bearing.	Bearing.
December 9	E. 33° S.	S. E. by E.
December 13	E. 33° S.	S. E. by E.
December 16	E. 33° S.	S. E. by E.

N. END LAKES HURON AND MICHIGAN, LAT. 46° N.

Sunrise.	Bearing.	Bearing.
December 9	E. 34° S.	S. E. by E.
December 13	E. 35° S.	S. E. ⅞ E.
December 16	E. 35° S.	S. E. ⅞ E.

LAKE SUPERIOR, LAT. 48° N.

Sunrise.	Bearing.	Bearing.
December 9	E. 35° S.	S. E ⅞ E.
December 13	E. 36° S.	S. E. ¾ E.
December 16	E. 36° S.	S. E. ¾ E.

With a compass correct magnetic, the difference between the observed and true bearing or amplitude will be the variation for the locality. Should there be any deviation on the course the vessel is heading at the time of taking the bearing, the difference between the observed and the true amplitude after the variation is applied, will be the amount of deviation on that course. If the correct magnetic bearing is to the right of the compass bearing, the deviation is easterly, if to the left, the deviation is westerly.

A CONTRACT has been made by the Navy Department with the Merritt-Chapman Wrecking Co. by which the company agrees to raise the Spanish cruiser Reina Mercedes on the understanding that if the company is not successful the government pays them no money. On the other hand, if the company succeeds in delivering the vessel at the Norfolk navy yard it will be paid the sum of $75,000.

A NATIONAL NAVAL RESERVE.

Lieut. W. H. H. Sutherland, U. S. N., in charge of matters pertaining to the naval militia, has made his report to the Secretary of the Navy, upon the naval militia during the war.

The report states that from the beginning of the building of the new navy, efforts have been made to organize a naval militia, but nothing has been done beyond the formation of a few state organizations. The principal training has been in the line of coast defense. The report then states:

"The experience of this short war has clearly demonstrated the imperative necessity for the maintenance of a national naval reserve, in the organization of which too much reliance must not be placed upon the merchant marine alone. This experience has shown that a considerable part of the merchant marine would be drawn into the service of the army in transport duty, which, of course, materially reduces the class from which the navy would hope to get its enlisted men.

"Although these organizations, many of whose members were recruited outside the seafaring class, failed to fully meet the requirements of the case, they were all upon which the general government had to draw at the beginning of the war. A majority of these, through co-operation on the part of the governors, have answered the call of the government and were mustered into the service for duty on cruising ships, in the U. S. auxiliary naval force, and in the coast signal service. The Navy Department was hampered in its efforts at rapid mobilization by its lack of federal jurisdiction over these organizations, but in the end succeeded in obtaining a force of over 4,000 officers and men.

"Too much cannot be said of the patriotism displayed by a majority of the members of these organizations, many of whom, although they had never been to sea before the mast, knew that they were to face not only the dangers of war, but hardships to which they had never been accustomed."

Lieut. Sutherland says the classes of naval militia should be enrolled for five years and in such classes should be included those who have served in the present war and all others who are connected with sea service and not in the regular naval establishment. These should take an annual course of instruction and drill. The enrollment of the new organization could be conducted by the officers of the naval militia who served in the Spanish war. A naval officer should be detailed to conduct the drilling of the companies. Officers should be commissioned in the naval reserve after an examination by a board of naval officers. The estimate of the cost of a naval reserve is placed at $40 per man. Upon the breaking out of the war the entire naval reserve would be available. In the case of the last war many in the state organization were rejected after a physical examination, but this would be avoided by a proper enrollment of the naval militia. In conclusion, he states:

"The Congress should provide that all laws which apply to officers, petty officers and enlisted men of the regular navy should also apply to the officers, petty officers and men of the U. S. naval reserves during the time that they are taking the annual course of instruction and drill prescribed by the Secretary of the Navy.

"It will be advisable to resist the general enrollment the first year to a limit which will come well within the appropriation.

"It is considered that a continuous annual appropriation of $200,000 will be sufficient to provide for a force of naval reserves to aggregate 7,000 men at the end of three years."

RIVER AND HARBOR IMPROVEMENTS ON THE LAKES.

In his estimates of appropriations for the next fiscal year, which ends June 30, 1900, submitted to Congress on Monday, Secretary Gage, of the Treasury, included the following items for continuing improvements of rivers and harbors in the Great Lakes region:

Ohio—Cleveland, $400,000; Ashtabula, $100,000; Conneaut, $150,000; Fairport, $150,000; Huron, $40,000; Port Clinton, $6,000; Sandusky, $100,000; Toledo, $150,000.

Indiana—Michigan City, outer harbor, $75,000.

Illinois—Chicago river, $137,000; Calumet Harbor, $150,000.

New York—Buffalo, $495,498; Ogdensburg, $20,000; Oswego, $50,000; Tonawanda harbor and Niagara river, $100,000.

Michigan—Belle river, $10,000; Black river, at Port Huron, $15,000; Detroit river, $100,000; Grand river, $100,000; Hay Lake channel, St. Mary's river, $200,000; Kalamazoo river, $50,000; Pine river, $5,560; Saginaw river, $25,000; St. Joseph river, $10,000; Sebewaing river, $16,000; Charlevoix, and entrance to Pine Lake, $25,000; Cheboygan harbor, $10,000; Frankfort, $45,000; Grand Haven, $30,000; Grand Marais, $50,000; Holland, $15,000; Ludington, $25,000; Manistee, $30,000; Marquettte, $50,000; Monroe, $7,000; Muskegon, $60,000; Pentwater, $25,000; Petoskey, $25,000; Portage Lake, $75,000; Presque Isle Point, Marquette bay, $30,000; St. Joseph, $75,000; Saugatuck, $10,000; Sand Beach, $100,000; South Haven, $15,000; White Lake, $35,000; Menominee, $5,500.

Wisconsin—Chippewa river, $40,000; Fox river, $50,000; Sturgeon Bay and Lake Michigan ship canal, $30,000; St. Croix river, $9,000; Ahnapee, $13,000; Ashland, $50,000; Green Bay, $28,000; Kenosha, $25,000; Kewaunee, $8,800; Manitowoc, $3,300; Milwaukee, $14,000; Milwaukee harbor of refuge, $75,000; Oconto, $25,000; Racine, $26,300; Sheboygan, $20,000; Two Harbors, $10,000.

Minnesota—Agate bay, $50,000; Grand Marais, $15,000.

REPORT OF FREIGHT AND PASSENGER TRAFFIC

TO AND FROM LAKE SUPERIOR FOR THE MONTH OF NOVEMBER, 1898, INCLUDING STATISTICS OF THE UNITED STATES AND CANADIAN CANALS AT SAULT STE. MARIE, MICHIGAN AND ONTARIO.

EAST BOUND.

ITEMS.	US CANAL	CANAD'N CANAL	TOTAL
Copper, net tons	16,068	553	16,621
Grain, bushels	2,338,842	524,673	2,863,515
Building Stone, net tons	.....	.....	.....
Flour, barrels	1,216,513	119,499	1,336,012
Iron ore, net tons	604,089	154,743	758,832
Iron, Pig, net tons	3,716	.....	3,716
Lumber, M. ft. B. M	84,771	133	84,904
Silver Ore, net tons	.....	.....	.....
Wheat, bushels	13 758 421	2,217,820	15 976 241
Unclass'd Freight, net tons	12,222	836	13,058
Passengers, number	453	109	562

WEST BOUND.

ITEMS.	US CANAL	CANAD'N CANAL	TOTAL
Coal, (hard) net tons	90,809	6,200	97,009
Coal, (soft) net tons	299,432	48,271	347,703
Flour, barrels	311	.....	311
Grain, bushels	11,200	.....	11,200
Manufactured Iron, net tons	20,108	2,805	22,913
Salt, barrels	70,005	1,874	71,879
Unclass'd Freight net tons	55,897	6,750	62,647
Passengers, number	96	240	336

East Bound Freight, net tons	1,623,182
West Bound Freight, net tons	535,103
Total	2,158,285
Total Craft, United States	1,394
Total Craft, Canadian	281
Total	1,675
Total Registered Tonnage, United States	1,545,524
Total Registered Tonnage, Canadian	270,018
Total	1,815,542

COURTESIES OF THE DOMINION.

In the early part of April last, pursuant to a request made at the instance of the Secretary of State by the British ambassador at Washington, the Canadian government granted facilities for the passage of four United States revenue cutters from the Great Lakes to the Atlantic coast, by way of the Canadian canal and the St. Lawrence river. The vessels had reached Lake Ontario, and were there awaiting the opening of navigation, when war was declared between the United States and Spain. Her majesty's government thereupon, by a communication of the latter part of April, stated that the permission granted before the outbreak of hostilities would not be withdrawn, provided the United States government gave assurance that the vessels in question would proceed to a United States port without engaging in any hostile operation. The United States government promptly agreed to the stipulated condition, it being understood that the vessels would not be prohibited from resisting any hostile attack.

President McKinley in his address to Congress says: "It will give me especial satisfaction if I shall be authorized to communicate to you a favorable conclusion of the pending negotiations with Great Britain in respect to the Dominion of Canada. It is the earnest wish of this government to remove all sources of discord and irritation in our relations with the neighboring dominion.

SOME ASTRONOMICAL NOTES FOR DECEMBER.

(COMMUNICATED.)

The most notable astronomical event of the past month was the predicted meteoric display. We are supposed to have passed through the most dense portion of the meteoric stream encountered by the earth this year, in full daylight, so of course no display was witnessed. Other supposably favorable times were spoiled by the persistent presence of clouds. When the heavens were unobscured meteors were disappointingly few. So the display as witnessed by the writer could not be considered a decided success. Let us hope that other observers were more fortunate and that next November all the conditions will be more favorable.

The comet, whose first visit to our system was announced during the last days of October, at no time was within the range of unaided vision, but could be easily seen by the aid of a small telescope. Such comets are never very interesting objects in the field of a small telescope—mere spots of mist with a somewhat bright center, seen on the dark background of the sky. The comet has passed the point of nearest approach to the earth and is also receding from the sun and hence is diminishing in brightness.

The following first magnitude stars are now visible in the evening: Vega toward the northwest, Altair in the west, Fomalhaut at the southwest. Capella is approaching the meridian and for most of December will be nearly overhead in the evening. Aldebaran is about midway between horizon and zenith toward the east in the early evening. Orion, with his two first magnitude stars, Betelgeuse and Rigel, is now well up in the east, and it may be timely to remember that Betelgeuse, Sirius and Procyon form a large triangle, almost equilateral with the brilliant Sirius at the southeastern vertex. Toward the northeast are the Gemini with Castor and Pollux, only the latter is classed as first magnitude, though it is difficult for ordinary eyes to determine which is the brighter. Omicron Ceti or Mira, the remarkable variable star, is increasing in brightness and has now attained about the third magnitude and gives promise of surpassing its usual maximum brightness. It may be found just east of the meridian toward the south in the early evening.

Mars is the only evening planet and is becoming quite conspicuous in the eastern sky. He is to be found in Cancer not far from Castor and Pollux. Toward the close of the month Venus and Saturn will be far enough away from the sun to be seen in the early morning. Jupiter is the most conspicuous morning planet.

There has been no remarkable exhibit of sun spots during the past month, though the face of the sun has seldom been seen entirely free from small spots.

The night is still encroaching on the day at both morning and evening, but on December 13th the sun will set one minute later, and at the close of the month and year we shall have ten minutes more of daylight in the evening; but the sun will continue to rise later till the close of the first week of the new year. The sun will reach his greatest southern declination December 21, and on that day the noonday shadows will attain their greatest length.

On December 1st the sun comes to the meridian ten minutes in advance of true time; on December 31 he will be found three minutes slow.

December 27 there will be a total eclipse of the moon visible at Cleveland and in nearly all the rest of the world. Particulars will be given later. D. SATTERTHWAITE.

Toledo, Ohio.

VESSELS CLASSED.

Vessels classed and rated by the American Bureau of Shipping in the "Record of American and Foreign Shipping" this week are as follows: American screw, Admiral Sampson, owned by the American Mail S. S. Co.; screw, Benefactor, owned by Wm. P. Clyde & Co.; screw, Colon, owned by the Pacific Mail S. S. Co.; screw, Seaboard; three-masted schooner, R. D. Spear; bark, Annie Reed; schooner, Ella H. Barnes; British half brig, Resultado; British half brig, Alice Bradshaw; Swedish galliott, Dolfin, and American three-masted schooner, Eleanor.

THE international conference at Washington, it is understood, has been examining the old proposition of a ship canal from the lakes to the seaboard. The idea now is to have an international survey. The proposition, of course, comes from the Dominion and is in the interest of the Canadian route. When the United States builds a ship canal it will be wholly inside the territory of this country. A ship canal to divert trade through Canada is not quite in our line, unless we do all the carrying trade as we are now doing.

MARINE RECORD

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CLEVELAND, O., DECEMBER 8, 1898.

A DETROIT river bridge bill has been introduced in the House and Senate. It is like the bill that has been pending since March, 1897, except that the main span (three are proposed) is to be 1,200 feet long, instead of 1,110. An effort will be made to pass it this winter. As the other it provides for a hearing of the parties concerned at Detroit. It also provides for the approval or disapproval of the plans by the Secretary of War upon recommendation or adverse report by a commission of three engineer officers of the army. The only material concession to navigation interests is the increased length of the main one of the three proposed spans.

PROVIDING the owners of the vessels chartered by the Atlantic Transport Co. have properly secured themselves, the chartering of a fleet of lake craft for coast service may work no injury to lake owners, yet, we can not but remark that the ideas of Mr. Besse, manager of the Atlantic Transport Co., seem to us almost idiotic when he undertakes to rush indifferent lake tonnage into coast service. Of course if he has undertaken to keep the fleet fully insured no financial harm can accrue to their owners, but, once past the St. Lawrence rapids, the owners of these boats might as well say goodby, fare you well, to their light lake-built wooden craft of a bygone age. Rebuild and refastening will be the order of the day until they pan out one by one or a half dozen together and leave their bones somewhere.

TO THOSE who have not given due thought to the subject, or in whose experience the matter has not fully presented itself to their view, we may say, that too much careful consideration cannot be given to the circumstance of abandoning a vessel. One of the most despicable acts which a master can be accused of, and it reflects as well on his officers and crew, is that of premature abandonment. It should be clearly borne in mind, and an ever present feature, that when a crew finds it necessary in their judgment, etc., to make a total abandonment it should be with the full consciousness and surety that no one else could ever step aboard, much less carry her to port, or in fact do anything more with her than those who had abandoned her. This logical reasoning and seamanlike attributes when in a tight pinch calls for the exhaustion of every possible alternative before any thought of abandoning the big boat for the small ones should even be thought of or hinted at, and, in some cases, where those in charge are likely to be overborne by the majority of a crew wishing to desert when there is a possibility of rescue or final safety, it would be only in order to stave in the life boats and make them stick to the last chance. Even this alternative has been successful in some instances, though with an American crew such a recourse would never be called into action.

BALANCED RUDDERS.

The master of a large, steel lake steamer sent a letter a few days ago to the marine editor of the Cleveland Plain Dealer in which he strenuously supported a type of balanced rudder having as great an area on the fore part as on the after side of the rudder stock.

Quoting from his letter "rudders should be built to reduce, as much as possible, all leverage on the steering gear. Without impairing a particle the efficiency of the rudder, this could be accomplished by placing the rudder stock well in the center of the rudder. That is, have almost as much of the blade forward of the stock as there would be aft of it. A beam sea of any pressure on the rudder would then throw most of the strain on the stock and shoe and would not have, as on the present build of rudders, such a destructive leverage on blade and quadrant."

The balanced rudder is not a new device by any means, that is, if a century counts in the way of age, nor has it been considered suitable for many trades in which merchant vessels are engaged, and perhaps more especially in narrow waters such as lake harbors where vessels are handled under their own steam. The ordinary balanced rudder revolves about an axis so situated that about two-thirds the area of the rudder is on the aft and the remaining one-third is on the fore side of the axis. The advantage of this form of rudder consists in the ease with which it can be put over to large angles, and when this is said, all that can be argued in favor of the balanced rudder has been told, nor has it always been found an unqualified success, for, as regards relieving pressure from a beam sea, or a sea from any other direction, given the same area and the pressure of sea will be the same whether the blade is all forward or aft of the rudder, nor does the shoe want to take any great strain, the balanced rudder being hung from the rudder head alone, and the shoe socket used merely as a guide for the keel.

For lake practice much has been argued in favor of the balanced rudder, and, no doubt, shipbuilders would usually prefer that form as it saves the work of fitting a rudder post, but we notice that the C. P. R. steamers in the Lake Superior trade still attach their rudders with gudgeons and pintles to a fairly massive rudder post, and we believe they navigate the most lumpy water on the lakes with a minimum of casualties to their steering gear.

A universally known writer on the subject of naval architecture, Mr. S. J. P. Thearle, in a work issued some years ago, says: "The enormous power required to get the rudders of high powered armorclads over to an efficient angle, and the consequent stresses on the rudder heads, rudder posts, and stern framing of these ships, caused naval architects to seek for some form of rudder which, while possessing the same efficiency as the ordinary type, should yet require the expenditure of less work to get it over to the desired angle and less power to keep it there while the speed of the ship is maintained, the balanced rudder was found to fulfill these conditions to a useful degree so long as the vessel was propelled by steam."

In the foregoing, Mr. Thearle only contended that it took less power to get the rudder over to a required angle and keep it there. In these days we have power and to spare for that purpose, in fact, much of the danger is in having too much power and rigidity of steering mechanism, for, a vessel of ten thousand tons may now be steered with one hand and the rudder held as in a vise, without an inch of give or take, so to speak, and this too in all weathers.

In further treating on this subject Mr. Thearle states that the balanced rudder is said to have been invented by Earl Stanhope, in 1790, but not in precisely its present form.

The credit of having practically tried the balanced rudder is generally assigned to Capt. Shuldham, R. N., who experimented with it in the year 1819. It was not, however, until 1863, that anything like a satisfactory test was made of its qualities.

Those who are in favor of balanced rudders for lake service will probably point out that where a rudder post is fitted it is always receiving punishment, etc., apparently overlooking the fact that the shoe and rudder are there to receive the same distress, and it not unfrequently happens that the balanced rudder is jumped out of the socket or bearing in the shoe piece, projecting from the stern post. Should the question of strength be the objective point, at which the correspondent was desirous of arriving at, there seems to be no room for argument further than to say that the bracing of a rudder post on which the rudder might hang, also supported at the head, would be preferable to a balance, certainly, as much a balance on the fore side as on the after part would not help matters any but instead, all the elements of derogation might be contained in such a form of rudder. As for instance, the balance placed forward of the rudder stock is the least effective portion of the rudder, on account of the impinging action of the live water on the angle presented. Another feature is, that the greater the balance, or the more area of rudder placed on the fore side of the stock, the larger the shoe or spur would need to be so as to allow the rudder to clear the screw, and this shoe piece, even when placed a foot above the line of keel and made as short as possible is always liable to be found not too well supported.

It would, therefore, appear that some seamanlike attention is required in handling the present steam steering gear and its equipment, whether the rudder was a balanced one or fitted on a rudder post, as for instance, in fine weather, through the greater part of the season, the rudder could be held in the steering gear as rigid as the keel when amidships, while in hard weather a little play might be allowed on the wheel chains, etc., so that there would be a certain amount of give and take to the rudder when an unusually heavy sea chanced to catch the stern out of water with the full area of the rudder surface exposed. Such a custom was always the fashion in the times gone by and it is hardly questionable but that the same tactics would be found working successfully under present conditions of steering.

We may judge from the foregoing that the balanced rudder was first introduced because it lessened the power, by the area of the balance required to get the rudder over to an angle of say 40° or 45° and not because it was of any advantage regarding lessening the strains or stresses set up in the after part of a vessel fitted with an ordinary rudder and engaged in the general carrying trade. Given the rudder at an angle of 30° or 40° to a beam sea and held as rigid as possible, the force of the sea would be minimized when striking the rudder at such an angle, while if amidships and the full area exposed, a little play during the height of a gale could not but ease the force of the sea on the rudder and with moderating weather the slack might be again taken up.

This subject is rather an important one so far as the best methods of handling lake vessels in a storm is concerned and we would be pleased to hear from those of our readers who are qualified to discuss the matter to a further extent than has been considered so briefly in the foregoing.

CONSIDERING the numerous strandings that have occurred during the last thirty days it would be quite in order to ascertain when and by whom the compass adjustments on several of the more important craft were made. It seems almost like begging the question to assert that a dozen of the most experienced masters on the lakes should go on day after day shaping wrong and consequently unsafe courses. Might it not transpire that in thick, heavy weather they had placed too much reliance on the adjustment of their compasses. It is also a well known fact that some of the adjusters do not furnish cards showing the residual errors left on certain courses after the otherwise perhaps fairly good adjustment had been made. It has also been known for an adjuster to work solely on the principal courses which the vessel will use when trading regularly to certain ports, thus driving a still larger degree of error, than previous to any adjustment at all, over those courses seldom used. The Canadians make the adjustment of a vessel's compasses compulsory and in doing so guarantee the work of the adjuster after a due examination of his aptitude in this special line of work. There are competent and conscientious compass adjusters on the lakes and there are others who can but think of getting on board a craft, say from a fish tug to a steamer costing a quarter of a million of dollars, going through a certain form and having the master check the bill preparatory to their rushing to the shipowner's office for a settlement of the same. The principal owners and managers of vessel property usually permit a trip or two to intervene so that they can learn from the ship's officers whether the adjustment seems to be fairly perfect or otherwise. At the same time, there are quite a number, and especially those whose tonnage is limited, pay these bills upon presentation, and we have known many instances where the master himself paid the amount demanded or agreed upon the moment the adjustment was declared made. It is safe to say that no iron or steel ship's compasses can be adjusted to remain correct magnetic through the changing conditions of courses, trim, cargoes, etc., over a whole season of navigation, and in the premises, it would be well if such arrangements could be made with the adjuster, so that he would see to it, through periodical visits, that all compasses that he had been called upon to adjust in the beginning of the season held their ad-

justments in order throughout the summer. This feature is of positive and direct importance in the matter of new hulls as the magnetism alters to an appreciable extent from time to time after a launch. Much more could be said on this important subject, and in all loyalty to the skill and knowledge displayed by the masters and pilots on the lakes it is only fair to suggest that these usually careful, intellectual men have been slightly hoodwinked at times by thinking they were going over the ground in a similar direction to that indicated by, perhaps, incorrectly adjusted compasses. In the inspection of equipment gone through each season by the local inspectors of steamboats it would be of vastly greater moment to certify that one compass was in perfect adjustment, than it is to announce that a few deck buckets were found in place, or that uninspected life-belts were guaranteed to contain nothing but excellent cork. As regards courses, there are compass courses, corrected compass courses, magnetic courses and true courses, so there is always a quartette to quote from when talking courses, furthermore, there are but few vessels that steer all courses alike, and perhaps still fewer iron or steel vessels that can exactly reverse courses and double back on their track, or go back in the same way that they steered out.

AGAIN is the subject being broached to fix a date for the opening of navigation in the spring of the year. This time it is thought advisable to bring the question to a focus through enlisting the best efforts of the marine insurance agents. It is thought that if the grain held in Chicago, for winter storage, is not allowed to leave there until about May 1, a great economy will have been brought about for all interests. The shipper will thus secure a longer term of free storage, the vessel owners will hold a much steadier freight market, as the down bound grain fleet can divide up and clear for Lake Superior instead of driving straight back to Lake Michigan, thus bunching tonnage at either end of the route prior to the opening of navigation on Lake Superior. The underwriters will not have their "gilded gingerbread" pulverized on account of the numerous cases of ice damage in and adjacent to the Straits of Mackinac, and so to take it all around, an arbitrary date to be inserted in grain insurance policies, previous to which a vessel may not leave the port of Chicago, is said to be a consummation devoutly to be wished. It is likely that many grain charters for winter storage and spring delivery will be made before the annual meeting of the Lake Carriers' Association takes place towards the middle of January, and a move, which meets with the approval of at least two of the most prominent general agents of marine insurance companies is being made to insert a clause in cargo policies, stating that the lake risk will not take effect until a certain date, etc., on or about May 1. Such a system is in force on the Gulf of St. Lawrence and is strictly lived up to, as for instance, no insurance can be placed from Montreal to the coast on or after November 10 or 15, or about a month earlier than the time that lake policies expire. It may be argued that no specific date can be set, as with a forward spring the weather would open up fine and there would be neither rhyme nor reason in keeping a vessel tied up at the dock or elevator at Chicago when there was free and unobstructed navigation to her port of destination. It also goes without saying that vessel owners ought not to put a whip in the hands of insurance agents to be lashed with, either on the lines of cargo, hull or freight insurance, or in any other manner, such as surveys, repairs or classification of their property. The business of the underwriter is to assure the assured that he will receive adequate indemnity under his policy and there it ends with the vessel owner so far as he is concerned with the assurer. The suggestion might also occur to vessel owners that they desired a certain amount of freedom and discretion in handling their own tonnage and that if one insurance company would not cover a grain cargo without limiting or extending the time of sailing, then another cargo and other underwriters would be looked for. So the pro's and con's might be gone over interminably, but the fact remains that the so called free and unobstructed navigation through the Straits of Mackinac is invariably heralded a week or ten days ahead of time and this too in spite of, or notwithstanding regular telegraphic reports from presumably qualified and responsible reporters stationed at the Straits on or about the earliest opening of navigation.

A FAIRLY well written article went the rounds of the daily press a month or two ago suggesting that a Duluth man ought to be the logical candidate for the presidency of the Lake Carriers' Association for the term of 1899-1900. This article was sent through the press from Chicago and we questioned its authenticity, authorship etc., at the time, as we have had occasion to do regarding other reports. It is within our province to point out that the gentleman whose name was given such publicity at the time mentioned, may not be eligible as a candidate for this honor, none would know it, however, better than himself, hence the lack of any further steps in the matter. It is whispered though that there is excellent presidential timber at the head of the lakes, and since Cleveland, Buffalo, as well as Chicago have had their innings and honors, why not Duluth next?

ALL hands are on the tip toe of excitement on marine insurance matters and the lake daily papers are teeming with all sorts of articles on premiums, policies, valuations, gains and losses, but principally the latter. The stories seem to be inspired, too, and it is found quite simple to have any sort of an article given space and duly published. We rather wonder who or how many of them are getting off all this gush over a few honest and shipshape, though too well advertised total losses. Underwriters take premiums cheerfully enough! Why whine when they have to pay the piper? Let the subject rest and insurances will be effected in the spring on an equitable basis all round all right enough.

THE meterological chart of the lakes for December, issued by the Weather Bureau, Department of Agriculture, must be considered a valuable aid to lake commerce and transportation. The normal data for December—fogs, storms and storm tracks—will be found invaluable to the lake pilot as a guide for and during the present month. Much credit is due to Alfred J. Henry, chief of division, and Norman B. Conger, local forecast official and marine agent at Detroit, for the painstaking work carried out by them as evidenced in the December chart now before us.

THE Toronto Mail and Empire is not in favor of modifying the restrictions on building war vessels on the lakes or of making the St. Lawrence system of canals a free and open waterway for the use of United States naval and merchant tonnage. The old question of state canals, the Erie for instance, crops out again in the otherwise logical arguments and reasoning of the Mail and Empire.

LAKE SUPERIOR LEVELS.

J. H. Darling of the United States Engineer Corps at Duluth, has prepared his November statement of the stage of water for Lake Superior. The mean level of the lake was 0.81 feet above low water datum. This is 0.20 feet lower than the preceding month and 0.68 feet lower than for November, 1897. The stage, however, was 0.16 feet higher than the average stage for November for 26 years.

UNITED STATES MERCANTILE MARINE.

On June 30, 1898, the merchant marine of the United States, including all kinds of documented shipping, comprised 22,633 vessels of 4,749,020 gross tons.

Divided into geographical divisions the tonnage is enrolled as follows: Atlantic and Gulf coasts, 16,442 vessels of 2,553,739 gross tons; Pacific coast, 1,754 vessels of 496,767 gross tons; northern lakes, 3,256 vessels of 1,437,500 gross tons and the western rivers 1,253 vessels of 261,732 tons. From the foregoing it will be seen that the lake tonnage almost doubles that of the Pacific coast and western rivers combined. There is an increase of 72 vessels over the figures for 1897 and a decrease of nearly 20,000 tons. This discrepancy is explained by the fact that upwards of 60,000 tons were transferred during the closing months of the year from the merchant list to the war and navy by purchase. Shipbuilding during the closing months of the fiscal year showed a marked gain over the corresponding period of the previous year and the present fiscal year promises to be of exceptional activity in our shipyards.

NOTICE TO MARINERS.

OFFICE OF THE LIGHT-HOUSE INSPECTOR, 9TH DIST.
CHICAGO, ILL., Dec. 7, 1898.

ST. JOSEPH ENTRANCE BLACK CAN BUOY.

Notice is hereby given that the third class black can buoy, at the entrance to the harbor of St. Joseph, Michigan, is reported adrift.

The black spar buoy will be established in place of the black can, as soon as practicable.

ELEVEN-FOOT SHOAL LIGHT-SHIP NO. 60.

Notice is hereby given that the eleven-foot shoal light-ship No. 60, Green Bay, Mich., left her station Dec. 6, 1898, for the winter.

By order of the Light-House Board,

C. O. ALLIBONE,
Commander U. S. Navy, Inspector of 9th L. H. District.

THE DOMINION MERCHANT SHIPPING.

The total number of vessels on the register books of the Dominion of Canada on December 31, 1897, including old and new vessels, sailing vessels, steamers and barges was 6,684, measuring 731,754 tons register tonnage, being a decrease of 595 vessels and a decrease of 57,545 tons register, as compared with 1896. The number of steamers on the registry books on the same date was 1,785, with a gross tonnage of 213,864 tons. Assuming the average value to be $30 per ton, the value of the registered tonnage of Canada, on the 31st day of December last, would be $21,952,620.

The number of new vessels built and registered in the Dominion of Canada during the last year was 231, measuring 17,094 tons register tonnage. Estimating the value of the new tonnage at $45 per ton, it gives a total value of $769,230 for new vessels. Of these a total of 50 new vessels were registered in the province, or division of Ontario, which includes all Canadian lake ports, their total net tonnage amounted to 3,850. The aggregate tonnage of the lake districts, on Dec. 31st, 1897, was 135,349, showing a steady decline of upward of 13,000 tons since 1895, when the total for the lakes stood at 148,609 tons, being the greatest amount of Canadian tonnage ever afloat on the lakes. In 1896 the number of vessels reached the highest, being 1,525, since which there has been a decline in numbers.

LAKE FREIGHTS.

The latest freight on iron ore reported for the season is 70 cents from Escanaba to load the end of this week, and a couple of cargoes from Ashland and Two Harbors on which a dollar was mentioned, but this rate is problematical as mine owners' boats clear up the last few cargoes.

Coal rates remained steady at 40 cents Lakes Michigan or Superior, but during the week shippers offered 45 cents, then up to 60 cents, to Gladstone or Escanaba with Chicago-Milwaukee at the old rate and fair chartering which will continue to the close. One owner sending two of his vessels to Lake Superior was offered 60 cents on coal from Cleveland last Saturday, but counting on detention, would listen to nothing less than $1.00. His steel boats went up light so no more coal goes to the head of the lakes this season.

The cream of the season freights and the elegant chance to even up the season's earnings for high classed tonnage came with the boost in wheat rates from Duluth. A decline of ¼ cent was noted last week from the head of the lakes, also on corn from Chicago, and there it stopped at the latter port and chartering frittered out; not so with Duluth, however, though shippers must have figured according to the outlook a week ago on a low down Lake Superior grain rate with vessels eager to take almost any figure to wind up the season. There was a steady upward tendency at the end of the week, 3 cents was offered, then 3¼ cents, 3½ cents and holding for 4 cents, and shippers instead of holding back coming right into line on the rise. On Tuesday the steel steamer Yuma was placed at 4 cents and other charters followed, while those who fixed on a rising freight market were slightly bit as the rate was firm on Wednesday at 4 cents. Chicago grain shipments having practically stopped at the 1¾ cent basis on corn, a number of charters have been made at 2¼ cents for winter storage and spring delivery at Buffalo. It would seem that any grain laden vessel reaching Buffalo from now on, can call the season off, as there is an elevator blockade at that port and prompt dispatch is out of the question.

DETROIT MARINE POST OFFICE.

LETTERS REMAINING ADVERTISED IN DETROIT, MICH., POST OFFICE DECEMBER 8, 1898.

To get any of these letters, addressees or their authorized agents will apply at the general delivery window or write to the postmaster at Detroit, calling for "advertised" matter, giving the date of this list and paying one cent.

Advertised matter is previously held one week awaiting delivery. It is held two weeks before it goes to the Dead Letter Office at Washington, D. C.

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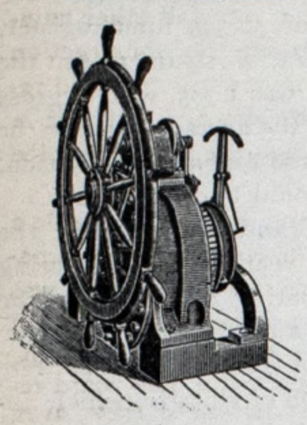

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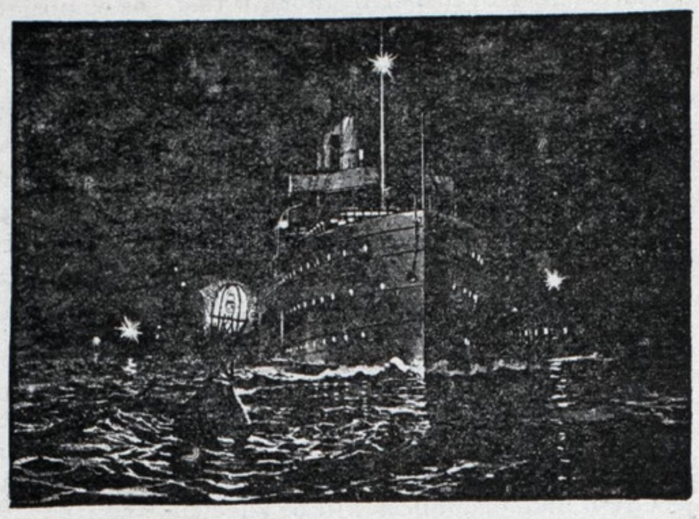

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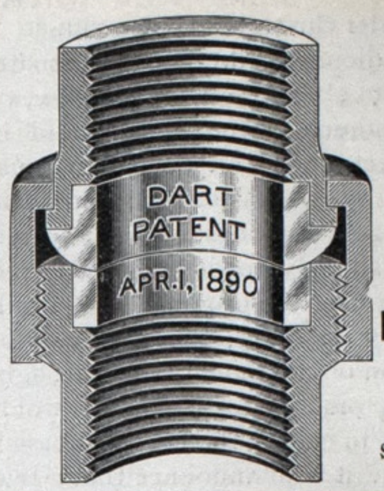

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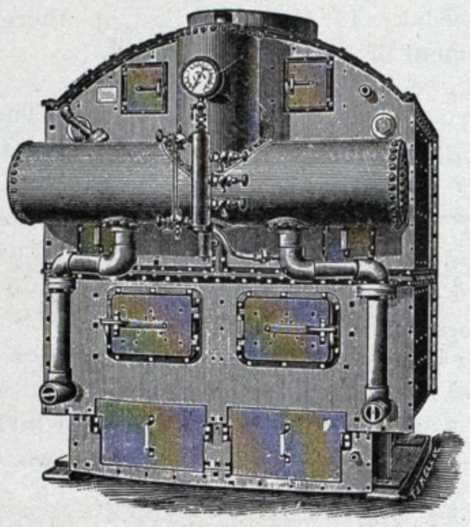

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THREE PROPELLERS FOR WAR SHIPS.

The general application of the triple-screw system to warships of certain types by foreign governments is shown in a recent report upon the subject transmitted to the Navy Department from its sources of information abroad. This country was the first to build naval vessels with three screws, and since the completion of the Columbia and Minneapolis, which were the only ones ever authorized, none others have been constructed for the navy. Until their trial and success had become known abroad, no other naval power made any great effort to utilize the three-screw system, although France had been experimenting with it, but without satisfactory results. Germany about the same time built a three-screw vessel and sent her over to this country to take part in the naval review at Hampton Roads. This vessel, the Kaiserin Augusta, is now attached to the German fleet at the Philippines.

The extent to which the triple-screws are used now in foreign navies is shown in these reports, and all the first-class powers, with the exception of Great Britain, seem to have adopted the idea. England, however, still clings to two screws for all classes of war ships and shows no disposition to change. Germany has two small three-screw cruisers in commission, besides three first-class battleships now building, and one armored cruiser projected. Her battleships are of the Kaiser Friedrick class.

France leads the world both in number, size and variety of war vessels fitted with three screws, but she has not yet developed one that equals in speed the two swift flyers of the American navy. For years she experimented with the three-screw system without success and only recently has perfected sufficiently to warrant her government in authorizing a number of ships of this kind.

Recently the Navy Department has been considering the question of applying three screws to some of the new ships which Congress is expected to authorize. The engineer-in-chief has advocated the installation of three sets of machinery in all new battleships hereafter contracted for and in every other vessel beyond a certain displacement. The policy board appointed to present a plan for recommendation to Congress includes in the list of vessels a number of heavily protected armored cruisers of the highest attainable speed and capable of great steaming radius. Such vessels, in the opinion of naval officers, should have three screws, and should the ships be authorized it is expected the designers will provide for the triple-screw system.

VISIBLE SUPPLY OF GRAIN

As compiled for The Marine Record, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY Bushels.
Buffalo	3,556,000	1,933,000	729,000	207,000	1,449,000
Chicago	2,375,000	5,152,000	626 000	192,000	399,000
Detroit	89 000	504,000	6,000	19,000	103,000
Duluth and Superior	2,860,000	1,075,000	34,000	96,000	381,000
Milwaukee	16,000	.....	1,000	1,000	49,000
Montreal	48,000	33,000	77,000	2,000	19,000
Oswego	.....	198,000	.....	.....	105,000
Toledo	188 000	423,000	97,000	18,000	.....
Toronto	125,000	.....	6,000	.....	41,000
On Canal	66,000	69,000	68,000	.....	20,000
Grand Total	24,115,000	20,362,000	5,544,000	1,024,000	3,840,000
Corresponding Date, 1897	34,845,000	40,949,000	15,462,000	3,553,000	4,750,000
Increase	746,000	.....	.....	.....	.....
Decrease	.....	1,901,000	42,000	115,000	58,000

While the stock of grain at lake ports only is here given, the total shows the figures for the entire country except the Pacific Slope.

THE NICARAGUA CANAL.

The Nicaragua canal commission, under the chairmanship of Rear Admiral John G. Walker, U. S. N., appointed July 24, 1897, under the authority of the sundry civil act of June 4, of that year, has nearly completed its labors and the results of its exhaustive inquiry into the proper route.

In the president's address to Congress he states as follows: The feasibility and cost of construction of an inter-oceanic canal by a Nicaraguan route will be laid before you. In the performance of its task the commission received all possible courtesy and assistance from the governments of Nicaragua and Costa Rica, which thus testified their appreciation of the importance of giving a speedy and practical outcome to the great project that has for so many years engrossed the attentions of the respective countries.

It appears that the government of Nicaragua, as one of its last sovereign acts before merging its powers in those of the newly formed United States of Central America, has granted an optional concession to another association, to become operative on the expiration of the present grant. It does not appear what surveys have been made or what route is proposed under this contingent grant, so that an examination of the feasibility of its plans is not embraced in the report of the canal commission. All the circumstances suggest the urgency of some definite acknowledgement of Congress at this session if the labors of the past are to be utilized and the linking of the Atlantic and Pacific ocean by a practical waterway is to be realized. That the construction of such a maritime highway is now more than ever indispensible so that intimate communication between our seaboards, demanded by the annexation of Hawaii and the prospective expansion of our influence and commerce in the Pacific and that our national policy, now more imperative than ever, calls for its construction, are propositions which I doubt not that Congress will duly appreciate and wisely act upon.

ON ROPE TRANSMISSION.

The American Manufacturing Co., of 67 Wall Street, New York, has issued a very useful little volume which it calls "A Little 'Blue Book' on Rope Transmission." There are less than fifty pages in the little work, which is substantially bound in blue cloth, but it is filled with useful information concerning the subject of rope transmission, interest in which is rapidly spreading, owing to the success made in experimental uses that have been made with rope for transmitting power. Practical tests have demonstrated that rope can be used for power transmission where a dozen or so years ago it was considered wholly impracticable. Improvement in making and preparing rope for such a use has undoubtedly helped in bringing transmission rope into deserved popularity, and now the demand for it is greater than ever.

All who use, or are thinking of using transmission rope, will find the American Company's "Little 'Blue Book'" most useful. It contains a brief consideration of the adaptability of rope of wire and hemp for transmitting power, compared with gearing and belting. There is a very concise, yet full, account of various kinds of fibrous rope that may be used, with some particulars of what is requisite in a transmission rope. The two general systems of rope driving are briefly outlined. Rope splicing, which is one of the most important elements in rope driving, is thoroughly explained, in fact the explanation of rope splicing is one of the most, if not the most, complete descriptions of skill in splicing. And this is given in two pages of text, accompanied by six full-page plates, showing the actual splicing of a rope at the plant of the American Company. There are a number of pages devoted to "problems in rope driving," which contain several valuable tables and diagrams.

INTEROCEANIC COMMUNICATION ACROSS THE ISTHMUS.

Historically, the proposition to connect the Altantic and Pacific oceans by a waterway is not new. Columbus was searching for a passage to the far East Indies when he discovered America; and in the sixteenth century the Portuguese, as well as the Spaniards, recognized that with a water route across the isthmus they might compete for trade in the East. Twenty-one concessions have been granted by the governments of Central America for the construction of a canal, and four of these to the United States. The negotiations of this government have covered a period of nearly eighty years, and have been participated in by every president since and including Mr. Monroe. All have favored the construction of an interoceanic communication across the isthmus, to be practically under control of this government, open, however to the commerce of the world. Numerous elaborate and expensive surveys with full details of every route proposed, from Mexico to Colombia, have been conducted by the United States to discover the best practicable route. These surveyors, the most competent engineers and officers of the army and navy, have concurred in the opinion that the proposed route, by way of Lake Nicaragua, is the best.—From "The Latest Aspects of the Nicaragua Canal Project," by Corry M. Stadden, in "North American Review for December.

THE HEAVENS IN DECEMBER.

Astronomical data for December, 1898, furnished the MARINE RECORD by the Washburn Observatory:

Mercury reaches greatest elongation east Dec. 3 and passes through inferior conjunction Dec. 21. Venus has just passed inferior conjunction and become a morning star. On Dec. 15 and 31 planet rises at about 5:30 and 4:30 a. m. respectively. Mars is conspicuous in the evening sky, and rises from 8:40 to 6:15 p. m. Jupiter rises in the southeast from 3:50 to 2:20 a. m. Saturn is becoming visible as a morning star, and rises December 31, in the southeast at 5:45 a. m. On Dec. 21 the sun reaches its lowest noon altitude. On Dec. 31, at 2 p. m., the earth is at perihelion or at its least distance from the sun. On Dec. 27 there will be a total eclipse of the moon, visible throughout the continents of the world. The totality begins at 4.58 p., m.about 25 minutes after moon rise at Milwaukee, and ends at 6:27 p. m. There will be also a slight partial eclipse of the sun Dec. 13, visible only in the Antarctic Ocean south of the Pacific.

The times of sunrise and sunset at Milwaukee for the month are as follows :

	SUNRISE.	SUNSET.
Dec. 1	7:04	4:18
Dec. 11	7:14	4:16
Dec. 21	7:21	4:20
Dec. 31	7:24	4:26

The times of the moon's phases are :

Dec. 6, third quarter.....4:06 a. m.
Dec. 13, new moon.....5:43 a. m.
Dec. 19, first quarter.....9:22 p. m.
Dec. 27, full moon.....5:39 p. m.

The principal fixed stars visible during the month in the evening hours are :

To the west—Vega and Altair. To the east—Aldebaran, the Pleiades, the bright stars, the constellation Orion, Sirius, Procyon, Capella, Castor and Pollux.

NAVAL NOTES.

ONE of the most valuable government reports of the year is that of Lieut. W. H. H. Sutherland, U. S. N., on the naval militia. It proposes a feasible scheme for an important addition to our naval defenses in the organization of a Naval Reserve composed of those whose principal occupation is on the high seas, sounds, bays, rivers and other navigable waters of the United States, or in the construction and repair of marine engines, or in the construction and repair of electrical engines or the parts thereof. It has a numerous class and should easily furnish the proposed force of 7,000 men.

THE Naval Board of Inspection and Survey has made a favorable report to the Secretary of the Navy on the submarine boat Holland. As will be remembered, this boat was refused by the Navy Department when it was submitted last summer, but owing to the request of the inventor, it was, about three weeks ago, given a second test. The board reports it is its opinion that, with an experienced crew, even better results will be obtained than in the recent test. Another government test will be held in New York in about one month, when the boat will be tried under war conditions. It is expected by that time the crew will have been trained so that it will be perfectly familiar with the vessel.

U. S. ENGINEER OFFICE, Duluth, Minn., Nov. 19, 1898. Sealed proposals for building pile and timber revetments for ship canals across Keweenaw Point, Mich., will be received here until noon, Dec. 20, 1898, and then publicly opened. Information furnished on application here, or, at branch office, Houghton, Mich. CLINTON B. SEARS, Major, Engrs. 47-50

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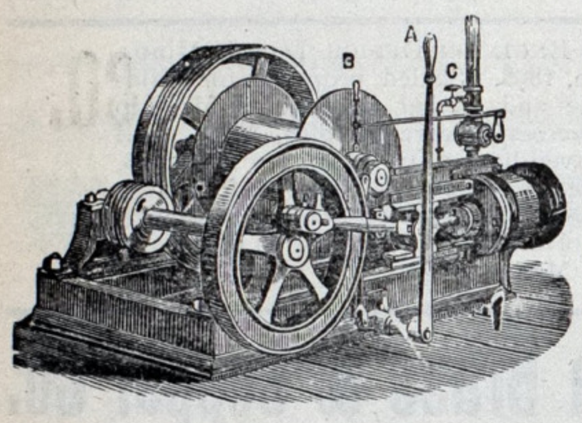

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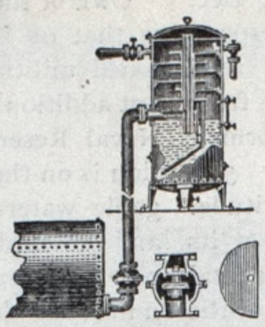

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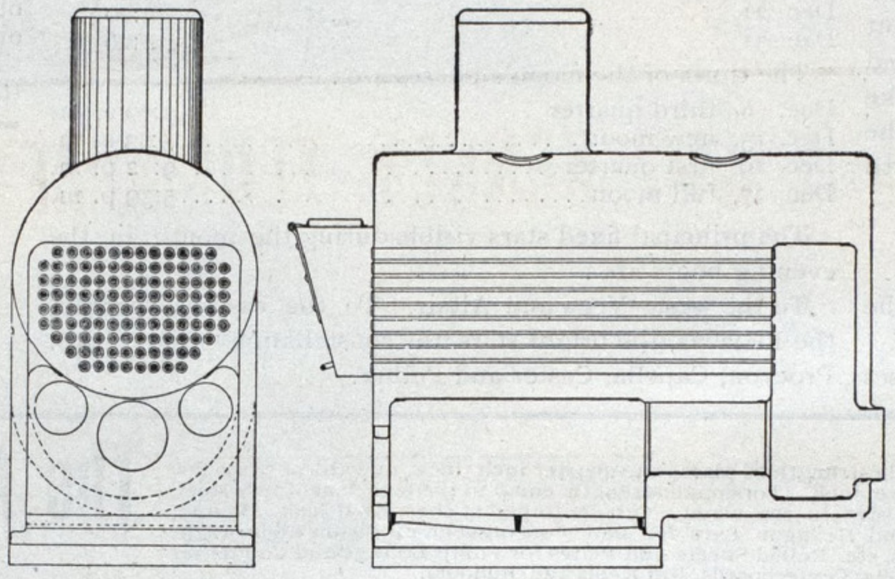

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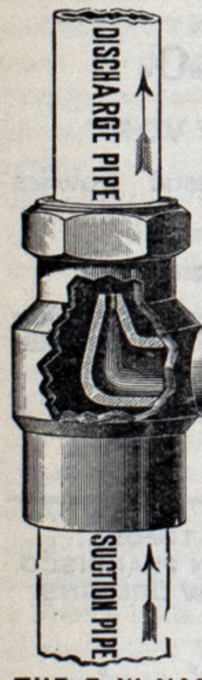

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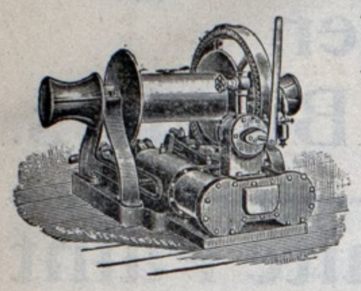

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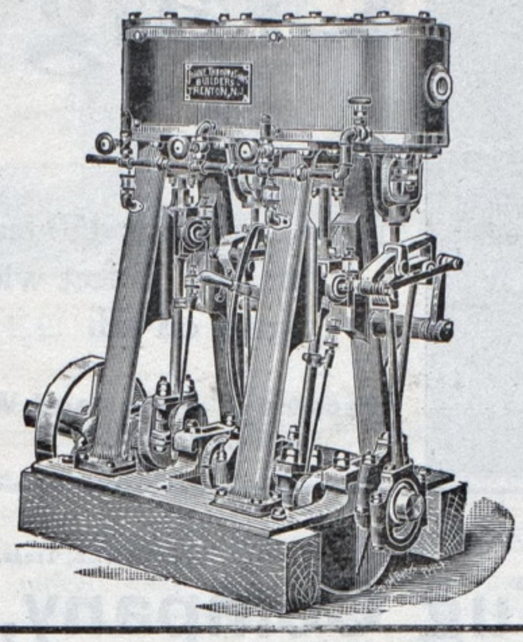

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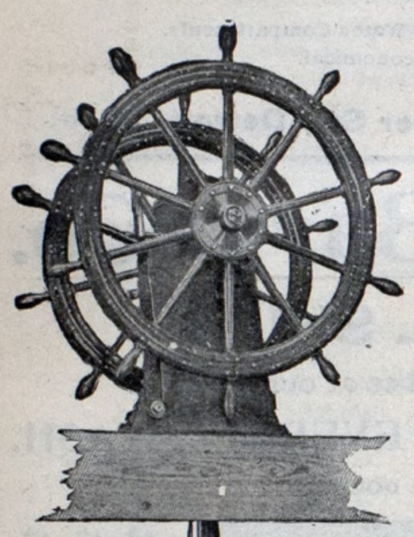

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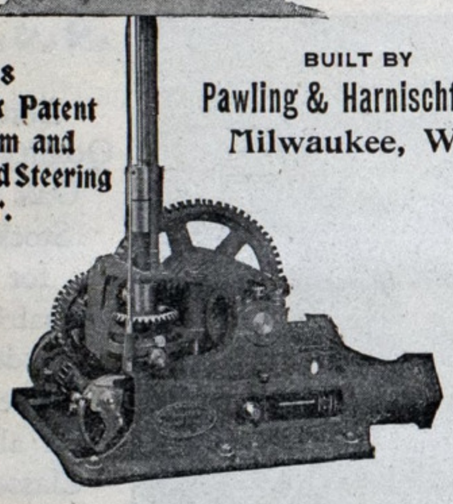

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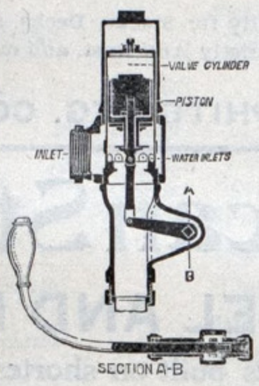

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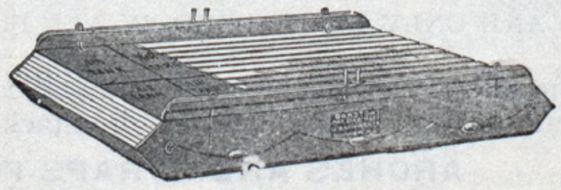

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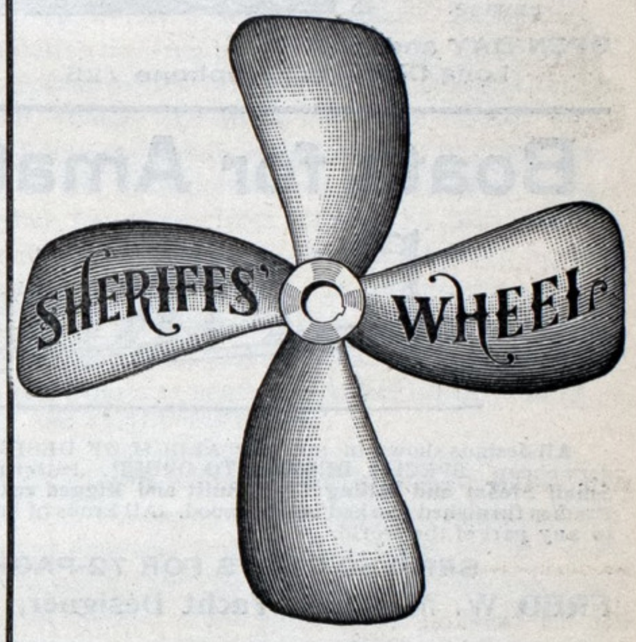

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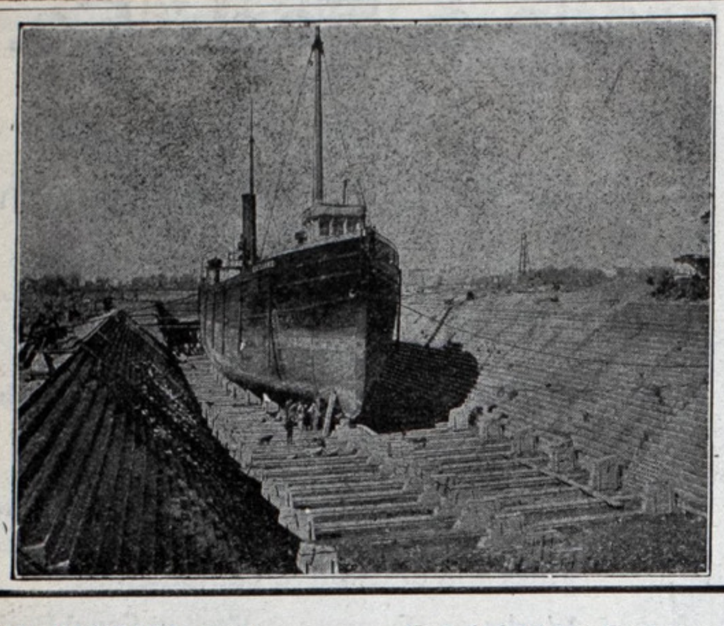

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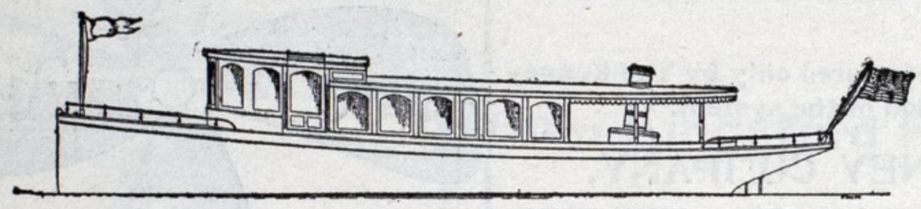

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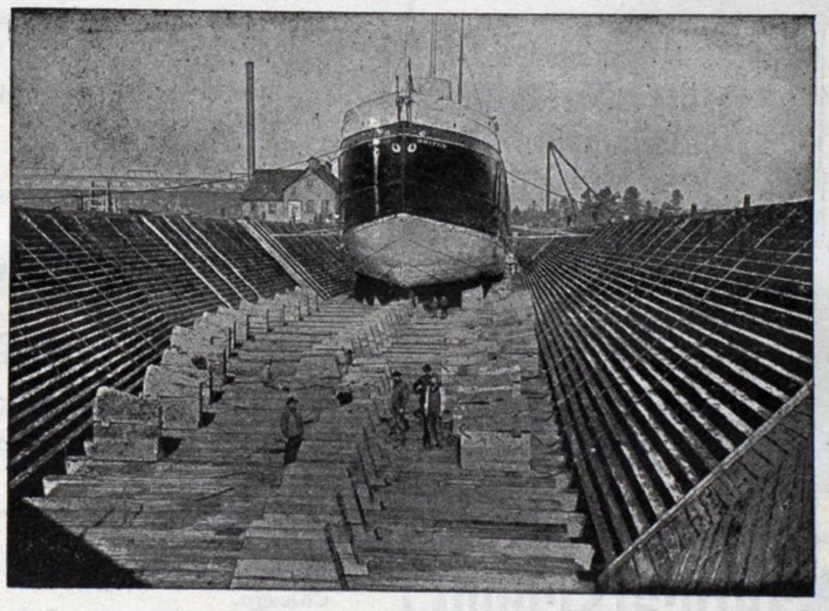

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